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EXAMINER	
KAO, JUTAI	

ART UNIT	PAPER NUMBER
2473	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/554,047	VASSEUR ET AL.	
	Examiner	Art Unit	
	JUTAI KAO	2473	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 July 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 7-46* is/are pending in the application.

4a) Of the above claim(s) *33-46* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 7-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/30/2009 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1-4 and 7-32 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inderieden (US 2004/0006640) in view of Meempat (US 6,904,017).

Inderieden discloses a method of notification to routing protocols of changes to routing information base including the following features.

Regarding claim 1, a method of determining traffic paths between one or more source-destination node pairs in a communication network (see "source to a destination" recited in paragraph [0004]), comprising: starting from a first set of paths between said source-destination node pairs (see "active ("best") route" recited in paragraph [0007]), determining a second set of paths between said source-destination node pairs (see "new route is provided" recited in paragraph [0007]) taking into account a set of constraints (see "The route with the lowest preference value is considered the best" recited in paragraph [0035]), such that said second set of paths emulates said first set of paths (as shown in paragraph [0007] and [0035]; all candidate paths are directed to the same source-destination, such that the second path emulates the source and destination of the first path), wherein said first set of paths is related to the use of a first routing protocol and the second set of paths is determined for use with a second routing protocol, different from said first protocol (see "providing a plurality of different routing protocols, each of which provide candidate route…multi-protocol routing architectures"

recited in paragraph [0007]; also see exemplary protocols as shown in elements 204-216 in Fig. 2).

Regarding claim 7, wherein the second set of paths is determined such that the routing using said second routing protocol is similar to the routing using said first routing protocol (see paragraph [0007], which describes using different protocols for selecting routes to the same destination, since the source and the destination is the same, at least the source and destination of the routing determined by the different protocols are similar).

Regarding claim 8, wherein said constraints is related to said second set of paths (see "The route with the lowest preference value is considered the best" recited in paragraph [0035]; wherein the preference value is associated with each of the candidate routes).

Regarding claim 9, wherein said constraints result from network nodes limitations and/or routing protocol constraints related to said second set of paths (see paragraph [0024], which shows that the RIB uses the information provided by each protocol to determine the active route to be used).

Regarding claim 10, wherein said first routing protocol includes an interior gateway protocol (see "IGP" recited in paragraph [0053]).

Regarding claim 13, wherein said second protocol data are routed on pre-determined paths (see Fig. 2, wherein the protocol data are routed on predetermined RIB updates paths).

Inderieden does not explicitly disclose the following features: regarding claim 1, wherein each of said paths extending from a network interface at a source node to a destination node (that is, Inderieden discloses routing of packets from a source to a destination, but does not explicitly mention that the determined paths extends from the source to the destination).

Meempat discloses a method to provide centralized call admission control and load balancing for a IP network including the following features.

Regarding claim 1, wherein each of said paths extending from a network interface at a source node to a destination node (see "MPLS explicit paths is assumed to be set up between each pair of source and destination edge nodes" recited in column 4, lines 61-65).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Inderieden using features, as taught by Meempat, in order to allow the load balancing of paths from the source to the destination (see Meempat column 4, lines 65-67).

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inderieden and Meempat as applied to claim 1 above, and further in view of Wen (US 2005/0128940).

Inderieden and Meempat disclose the claimed limitations as shown above.

Inderieden and Meempat do not disclose the following features: regarding claim 2, wherein the second set of paths is determined such that the traffic load on said second set of paths emulates the traffic load on said first set of paths.

Wen discloses a 1+1 mesh protection method including the following features.

Regarding claim 2, wherein the second set of paths is determined such that the traffic load on said second set of paths emulates the traffic load on said first set of paths (see "transmits two copies of traffic across the network on both paths" recited in paragraph [0038]; that is, the candidate routes in Inderieden can be used as the protection path, which is determined to be carry the same traffic, thus emulates the traffic load of the primary path).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Inderieden and Meempat using features, as taught by Wen, in order to provide protection for the primary path.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inderieden and Meempat as applied to claim 1 above, and further in view of Goringe (US 2003/0043820).

Inderieden and Meempat disclose the claimed limitations as shown above.

Inderieden and Meempat do not disclose the following features: regarding claim 3, wherein the first set of paths are included in a routing and load model for said source-destination node pairs related to a first routing protocol; regarding claim 4, wherein said routing and load model takes in to account the network topology, the route configuration

resulting from the use of the first routing protocol and/or a selection of source destination node pairs.

Goringe discloses a method to discover IP network topology including the following features.

Regarding claim 3, wherein the first set of paths are included in a routing and load model for said source-destination node pairs related to a first routing protocol (see "logical network topology described by a particular routing protocol…a map or model of the routing topology can be generated" recited in paragraph [0024]).

Regarding claim 4, wherein said routing and load model takes in to account the network topology, the route configuration resulting from the use of the first routing protocol and/or a selection of source destination node pairs (see "logical network topology described by a particular routing protocol…a map or model of the routing topology can be generated" recited in paragraph [0024]).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Inderieden and Meempat using features, as taught by Goringe in order to identify the network routing topology for routing purposes.

8. Claims are 11 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Inderieden and Meempat as applied to claim 1 above, and further in view of Goguen (US 6,665,273).

Inderieden and Meempat disclose the claimed limitations as shown above.

Inderieden and Meempat do not disclose the following features: regarding claim 11, wherein said first and/or said second routing protocol applies load balancing; Regarding claim 14, wherein said second routing protocol includes a multi-protocol label-switching traffic engineering protocol.

Goguen discloses a method of dynamically adjusting MPLS traffic engineering tunnel bandwidth including the following features.

Regarding claim 11, wherein said first and/or said second routing protocol applies load balancing (see "IGP is load balancing…" recited in column 3, lines 9-10).

Regarding claim 14, wherein said second routing protocol includes a multi-protocol label-switching traffic engineering protocol (see "MPLS TE" recited in column 3, line 35).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Inderieden and Meempat using features, as taught by Goguen, in order to prevent overflowing any single links by balancing the load on each links.

9. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inderieden and Meempat as applied to claim 1 above, and further in view of Wright (US 2006/0039364).

Inderieden and Meempat disclose the claimed limitations as shown above.

Inderieden and Meempat do not disclose the following features: regarding claim 12, wherein said first routing protocol includes an equal cost multiple paths extension.

Wright discloses a system for policy-enabled communications network including the following features.

Regarding claim 12, wherein said first routing protocol includes an equal cost multiple paths extension (see “ECMP…can embed the load balancing optimization problem in the IGP implementation" Recited in paragraph [0114]).

It would have been obvious to one of the ordinary skill in art at the time of the invention to modify the system of Inderieden and Meempat using features, as taught by Wright, in order to in order to optimize the load balancing of the IGP implementation (see Wright, paragraph [0114]).

10. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inderieden and Meempat as applied to claim 1 above, and further in view of Harshavardhana (US 2001/0012298).

Inderieden and Meempat disclose the claimed limitations as shown above.

Inderieden and Meempat do not disclose the following features: regarding claim 15, wherein said constraints comprise a maximum number of paths between each source-destination node pair.

Harshavardhana discloses a method for routing signals including the following features.

Regarding claim 15, wherein said constraints comprise a maximum number of paths between each source-destination node pair (see “a pre-specified parameter may

be used to limit the maximum number of paths which can be stored in memory for each source-destination…" recited in paragraph [0029]).

It would have been obvious to one of the ordinary skill in art at the time of the invention to modify the system of Inderieden and Meempat using features, as taught by Harshavardhana, in order to in order to ensure the node constraint is not violated.

11. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inderieden and Meempat as applied to claim 1 above, and further in view of Prager (US 2007/0286201).

Inderieden and Meempat disclose the claimed limitations as shown above.

Inderieden and Meempat do not disclose the following features: regarding claim 16, wherein said constraints comprise that the traffic between a particular source-destination node pair is load balanced such that the share of traffic along any path is a fraction with constrained integer numerator and denominator.

Prager discloses a system for parallel connection selection in a communication network including the following features.

Regarding claim 16, wherein said constraints comprise that the traffic between a particular source-destination node pair is load balanced such that the share of traffic along any path is a fraction with constrained integer numerator and denominator (see "the bandwidth load balance value may be expressed a ratio of a numerator and a denominator" recited in paragraph [0022]; and it is well known in math to express ratio

with numerator and denominator can always be represented using integer numerator and denominators).

It would have been obvious to one of the ordinary skill in art at the time of the invention to modify the system of Inderieden and Meempat using features, as taught by Prager, in order to perform load balancing of the bandwidth.

12. Claim 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inderieden and Meempat as applied to claim1 above, and further in view of Gawlick (US 5,519,836).

Inderieden and Meempat disclose the claimed limitations as shown above.

Inderieden and Meempat do not disclose the following features: regarding claim 17, wherein a search technique is used to determine said second set of paths; Regarding claim 18, wherein one of the following search techniques are used to determine said second set of paths: “generate and test” search algorithm, constraint programming and/or mathematical programming; regarding claim 19, wherein an optimal search algorithm is used; regarding claim 20, wherein a heuristic search algorithm is used.

Gawlick discloses a method of online permanent virtual circuit routing including the following features.

Regarding claim 17, wherein a search technique is used (see “heuristic in which each possible alternative path...is examined…" recited in column 5, line 58 to column 6,

line 8) to determine said second set of paths (see Inderieden as used in the rejection of claim 1, wherein the path to be used is determined after a comparison of the paths).

Regarding claim 18, wherein one of the following search techniques are used to determine said second set of paths: “generate and test” search algorithm (see “heuristic in which each possible alternative path...is examined…" recited in column 5, line 58 to column 6, line 8; that is, the heuristic generates and test each possible alternative path to reduce the cost of routing), constraint programming and/or mathematical programming.

Regarding claim 19, wherein an optimal search algorithm is used (see “heuristic in which each possible alternative path...is examined…" recited in column 5, line 58 to column 6, line 8; that is, the heuristic searches for the path with the lowest cost, which would be the optimal path).

Regarding claim 20, the method wherein a heuristic search algorithm is used (see “heuristic in which each possible alternative path...is examined…" recited in column 5, line 58 to column 6, line 8).

It would have been obvious to one of the ordinary skill in art at the time of the invention to modify the system of Inderieden and Meempat using features, as taught by Gawlick, in order to route through the path with the lowest cost.

13. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inderieden and Meempat as applied to claim 1 above, and further in view of Beshai (US 2004/0202111).

Inderieden and Meempat disclose the claimed limitations as shown above.

Inderieden and Meempat do not disclose the following features: regarding claim 21, the method wherein each source-destination node pair is treated independently.

Beshai discloses a method of courteous routing including the following features.

Regarding claim 21, the method wherein each source-destination node pair is treated independently (see "independent route sets have been determined for each node-pair (source and destination)" recited in paragraph [0045]).

It would have been obvious to one of the ordinary skill in art at the time of the invention to modify the system of Inderieden and Meempat using features, as taught by Beshai, in order to produce a routing table of routes for each node pairs.

14. Claims 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inderieden, Meempat and Beshai as applied to claim 21 above, and further in view of Dull (US 2005/0018693).

Inderieden, Meempat and Beshai disclose the claimed limitations as shown above.

Inderieden, Meempat and Beshai do not disclose the following features: regarding claim 22, the method comprises a method of avoiding a system a systematic bias for particular paths; regarding claim 23, wherein ties between symmetric solutions are broken randomly.

Dull discloses a fast filtering process for a highly integrated network device including the following features.

Regarding claim 22, the method comprises a method of avoiding a system a systematic bias for particular paths (see “equal cost paths to be chosen in a random manner” recited in paragraph [0039]; the random selection avoids bias with the nature of its randomness).

Regarding claim 23, wherein ties between symmetric solutions are broken randomly (see “equal cost paths to be chosen in a random manner” recited in paragraph [0039]; the random selection prevents any symmetric solutions; therefore it is considered to be randomly breaking any symmetric solutions).

It would have been obvious to one of the ordinary skill in art at the time of the invention to modify the system of Inderieden, Meempat and Beshai using features, as taught by Dull, in order to prevent overloading a specific path.

15. Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inderieden, Meempat and Wen.

Inderieden discloses a method of notification to routing protocols of changes to routing information base including the following features.

Regarding claim 24, a method of calculating traffic paths between one or more source-destination node pairs in a communication network (see "source to a destination” recited in paragraph [0004]), comprising: starting from a first set of paths between said source-destination node pairs (see “active (“best”) route" recited in paragraph [0007]), determining a second set of paths between said source-destination node pairs (see “new route is provided” recited in paragraph [0007]) taking into account

a set of constraints (see “The route with the lowest preference value is considered the best” recited in paragraph [0035]), such that said second set of path is similar to the first set of paths (as shown in paragraph [0007] and [0035]; all candidate paths are directed to the same source-destination, such that the second path emulates the source and destination of the first path); wherein said first set of paths is related to the use of a first routing protocol and the second set of paths is determined for use with a second routing protocol, different from said first protocol (see “providing a plurality of different routing protocols, each of which provide candidate route…multi-protocol routing architectures” recited in paragraph [0007]; also see exemplary protocols as shown in elements 204-216 in Fig. 2).

Regarding claim 25, a method of calculating traffic paths between one or more source-destination node pairs in a communication network (see "source to a destination” recited in paragraph [0004]), comprising: starting from a first set of paths between said source-destination node pairs (see “active (“best”) route" recited in paragraph [0007]) determined using a first protocol (see “providing a plurality of different routing protocols, each of which provide candidate route…multi-protocol routing architectures” recited in paragraph [0007]; also see exemplary protocols as shown in elements 204-216 in Fig. 2), determining a second set of paths between said source-destination node pairs (see “new route is provided” recited in paragraph [0007]) for use with a second protocol (see “providing a plurality of different routing protocols, each of which provide candidate route…multi-protocol routing architectures” recited in

paragraph [0007]; also see exemplary protocols as shown in elements 204-216 in Fig. 2).

Inderieden does not explicitly disclose the following features: regarding claims 24 and 25, wherein each of said paths extending from a network interface at a source node to a destination node (that is, Inderieden discloses routing of packets from a source to a destination, but does not explicitly mention that the determined paths extends from the source to the destination); regarding claim 24, wherein the traffic load of said second set of paths is similar to the first set of paths; regarding claim 25, wherein the load balancing in said first and second routing protocol is similar.

Meempat discloses a method to provide centralized call admission control and load balancing for a IP network including the following features.

Regarding claims 24 and 25, wherein each of said paths extending from a network interface at a source node to a destination node (see "MPLS explicit paths is assumed to be set up between each pair of source and destination edge nodes" recited in column 4, lines 61-65).

Wen discloses a 1+1 mesh protection method including the following features.

Regarding claim 24, wherein the traffic load of said second set of paths is similar to the first set of paths (see "transmits two copies of traffic across the network on both paths" recited in paragraph [0038]; that is, the candidate routes in Inderieden can be used as the protection path, which is determined to be carry the same traffic, thus the traffic load of the primary path and the protection path would be similar).

Regarding claim 25, wherein the load balancing in said first and second routing protocol is similar (see "transmits two copies of traffic across the network on both paths" recited in paragraph [0038]; that is, the candidate routes in Inderieden can be used as the protection path, which is determined to be carry the same traffic, thus the load balancing of the primary path and the protection path would be similar in that the at least the same load is carried).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Inderieden using features, as taught by Meempat and Wen, in order to allow the load balancing of paths from the source to the destination (see Meempat column 4, lines 65-67) and in order to provide protection for the primary path.

16. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inderieden and Meempat as applied to claim 1 above, and further in view of Baum (US 2007/012488) and Goguen.

Inderieden and Meempat disclose the claimed limitations as shown above.

Inderieden also discloses the following features.

Regarding claim 26, where the first set of paths is related to the use of a first routing protocol, where the second set of paths is determined for sue with a second routing protocol (see "providing a plurality of different routing protocols, each of which provide candidate route…multi-protocol routing architectures" recited in paragraph

[0007]; also see exemplary protocols as shown in elements 204-216 in Fig. 2), said first protocol comprises an interior gateway protocol (see “IGP” recited in paragraph [0053])

Inderieden and Meempat not disclose the following features: regarding claim 26, a method of operating a communication network, comprising switching at least some network traffic from a first routing protocol to a second routing protocol, wherein the method includes a method of calculating traffic paths according to claim 1, and said second routing protocol comprises a multi-protocol label-switching traffic engineering protocol.

Baum discloses vertical services integration enabled content distribution mechanism including the following features.

Regarding claim 26, a method of operating a communication network, comprising switching at least some network traffic from a first routing protocol to a second routing protocol (see “Fig. 5 migration to other types of...routing protocols" recited in paragraph [0059]; and see Fig. 5, where a number of routing protocols are shown including Ethernet, Frame Relay and etc.), wherein the method includes a method of calculating traffic paths according to claim 1 (see rejection of claim 1).

Goguen discloses a method of dynamically adjusting MPLS traffic engineering tunnel bandwidth including the following features.

Regarding claim 26, wherein said second routing protocol includes a multi-protocol label-switching traffic engineering protocol (see “MPLS TE” recited in column 3, line 35).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Inderieden and Meempat using features, as taught by Goguen and Baum, in order to prevent overflowing any single links by balancing the load on each links and in order to increase flexibility in routing protocol usage.

17. Claim 27 rejected under 35 U.S.C. 103(a) as being unpatentable over Inderieden and Meempat as applied to claim 1 above, and further in view of Klinker (US 2004/0249971).

Inderieden and Meempat disclose the claimed limitations as shown above.

Inderieden and Meempat do not disclose the following features: regarding claim 27, a method of measuring traffic between a plurality of source and destination nodes in a communication network comprising the method according to claim 1.

Klinker discloses a method for providing dynamic domain name system including the following features.

Regarding claim 27, a method of measuring traffic between a plurality of source and destination nodes in a communication network (see “measuring inbound traffic performance from each of the identified sources to the destination address” recited in paragraph [0023]) comprising the method according to claim 1 (see rejection to claim 1 using Inderieden and Meempat as shown above).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Inderieden and Meempat using features, as taught by Klinker, in order to monitor the performance of the network.

18. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inderieden, Meempat, Goguen and Baum as applied to claim 26 above, and further in view of Charny (US 2004/0052207).

Inderieden, Meempat, Goguen and Baum disclose the claimed limitations as shown above.

Inderieden, Meempat, Goguen and Baum do not disclose the following features: regarding claim 28, wherein at least some of the traffic is protected using secondary tunnels.

Charny discloses a method of load balancing for fast reroute backup tunnels including the following features.

Regarding claim 28, wherein at least some of the traffic is protected using secondary tunnels (see "backup tunnel may protect multiple parallel paths…" recited in the abstract).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Inderieden, Meempat, Goguen and Baum using features, as taught by Charny, in order to protect system from link failure.

19. Claims 29, 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inderieden and Meempat as applied to claim 1 above, and further in view of Charny.

Inderieden and Meempat disclose the claimed limitations as shown above.

Inderieden and Meempat do not disclose the following features: regarding claim 29, a method of providing secondary paths for a communication network, comprising the method of claim 1; regarding claim 31, wherein part of the remaining link capacity is used for the secondary paths; regarding claim 32, wherein the secondary paths are determined for the non-load balanced case.

Charny discloses a method of load balancing for fast reroute backup tunnels including the following features.

Regarding claim 29, a method of providing secondary paths for a communication network, (see “backup tunnel may protect multiple parallel paths…” recited in the abstract), comprising the method of claim 1 (see rejection of claim 1).

Regarding claim 31, wherein part of the remaining link capacity is used for the secondary paths (see “backup tunnels having sufficient remaining bandwidth to protect the LSP..." recited in paragraph [0054]).

Regarding claim 32, wherein the secondary paths are determined for the non-load balanced case (see “backup tunnel may protect multiple parallel paths…” recited in the abstract; that is, the secondary paths are used for backup purposes and does not have anything to do with the load balancing of the primary paths).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Inderieden and Meempat using features, as taught by Charny, in order to protect system from link failure.

20. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inderieden, Meempat and Charny as applied to claim 29 above, and further in view of Cortez (US 7,130,262).

Inderieden, Meempat and Charny disclose the claimed limitations as shown above.

Inderieden, Meempat and Charny do not disclose the following features: regarding claim 30, wherein a measured maximum link load is used as the primary bandwidth for each link.

Cortez discloses a method for providing alternative link weights for failed network paths including the following features.

Regarding claim 30, wherein a measured maximum link load is used as the primary bandwidth for each link (see "primary service path…maximum available capacity" recited in the abstract; that is, the system finds a path with the maximum bandwidth to be used as the primary data path when restoration is required).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Inderieden, Meempat and Charny using features, as taught by Cortez, in order to provide optimal bandwidth to the users.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUTAI KAO whose telephone number is (571)272-9719. The examiner can normally be reached on Monday ~Friday 7:30 AM ~5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571)272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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